REMARKS/ARGUMENTS

1. Introduction

This is a full and timely response to the Office action of June 15, 2007. Paragraph 18 has been amended to overcome informalities. Arguments are presented differentiating the current application from known references and no claims have been amended. Reconsideration of the application is respectfully requested.

2. Specification

The equation on page 5, [0018] is not easily readable nor reproducible (particularly the exponents). Appropriate action is required.

Paragraph [0018] has been amended by a replacement of the original equation with an exact duplicate of the original equation only in an enlarged form. The Examiner has stated that the original is not easily readable, but careful analysis of the original will validate that original and the enlarged equations are identical. If this method of working with the Examiner to overcome cited specification informalities should be unacceptable, the applicant respectfully requests specific suggestions from the Examiner as to how the cited informalities can be overcome.

3. Claims

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. (US Patent 6,266,361 hereinafter '361) in view of Huang et al. (US Patent 5,991,289 hereinafter '289). Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. (US Patent 6,266,361 hereinafter '361) in view of Huang et al. (US Patent 5,991,289 hereinafter '289) and further in view of Powel, II et al. (US Patent 6,130,921) and Chung et al. (US Patent 6,005,889).

As stated in the '289 patent (Col.3, lines 10-11) and by the Examiner on page 3 of

the current Office action, the '289 patent discloses a method of estimating *fractional* carrier frequency offset of an input signal. The '289 patent can estimate the fractional frequency offset by complex conjugate multiplication from the OFDM GI interval, however, can only estimate the *fractional* part and must be the same polarity signal (identical signal).

As is well known in the art and as evidenced by the Examiner cited patents, calculating the integer part and the fractional part of carrier frequency offset is traditionally done with two separate procedures. For example '361 in Col.2, lines 19-29 states that "the integer part of the carrier frequency offset" is found via peak detection and "the fractional part of carrier frequency offset" can be calculated by using the phase-angle difference.

The inventive step disclosed and claimed in the present application is that a single procedure can be performed which will calculate the total carrier frequency offset, saving hardware and processing power. Additionally, the present claims can estimate the total frequency offset (not only the fractional part) for same polarity signals and non-polarity signals.

The applicant respectfully points out that just because references can be combined is not sufficient to establish a case of ***Prima Facie*** obviousness (MPEP 2143.01). **Both references distinctly point out their respective two procedure steps, one for the fraction part and one for the integer part of the carrier frequency offset, with differing procedures utilizing different methods. However, there is no teaching, suggestion, nor motivation found in the references that would lead one skilled in the art to the claimed invention.** The simple application of the claimed single procedure to calculate total carrier frequency carrier offset is novel and useful. At least for these reasons, **the applicant respectfully requests reconsideration of all claims.**

Additionally, specifically concerning claim 3, the '361 patent estimates the integer part of frequency offset by FFT output, and estimates the fractional part by main-cursor

by peak detection. A flag is used to find the positive or negative direction. Thus, this flag is used only for fractional part correction.

However, in the present invention, the total frequency offset is estimated by main-cursor by peak detection. A sign of real part of the conjugate is multiplied with the output to find 180 degree rotation for a non-polarity signal. This technique is different from the '361 patent. **Therefore, reconsideration of claim 3 is again respectfully requested.**

4. Summary

The applicant contends that the present claims represent a new and useful method and device utilizing a single procedure for calculating total carrier frequency offset in a DSSS wireless communication having a BPSK signal. The applicant asserts that one skilled in the art would not be motivated to create an embodiment of the present invention based on any known references because no teaching, no suggestion, and no motivation for the suggested combination of references is found in any of the references, and the applicant is also unable to locate any reasoning provided by the Examiner for the suggested combination other than "both references address the same issue, estimating and correcting for carrier frequency offsets in wireless systems". The applicant respectfully asserts that a bona fide case of ***Prima Facie*** obviousness has not been presented and respectfully requests reconsideration of claims 1-11.

Sincerely yours,

Winston Hsu Date: 10.15.2007

Winston Hsu, Patent Agent No. 41,526
P.O. BOX 506, Merrifield, VA 22116, U.S.A.
Voice Mail: 302-729-1562
Facsimile: 806-498-6673
e-mail : winstonhsu@naipo.com

Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)